

REMARKS

Amendment summary

Claim 18 is amended to correct a typographical error.

Claim 45 is newly added. Support for this claim may be found, e.g., in at least claims 1, 2, 13, 14, and 16.

No new matter is added by this Amendment, and Applicants respectfully submit that entry of the Amendment is proper.

Status of the claims

Claim 18 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 1-22 and 28-35 have been provisionally rejected on the grounds of obviousness-type double patenting based on U.S. Application No. 10/542,333 in view of Storch et al. (WO 98/22517) (hereinafter “Storch”). Claims 1-22 and 28-35 have also been provisionally rejected on the grounds of obviousness-type double patenting based on U.S. Application No. 10/501,393 in view of Storch. Further, Claims 1-22 and 28-35 have been provisionally rejected on the grounds of obviousness-type double patenting based on U.S. Application No. 10/544,113 in view of Storch.

Claims 1, 20, 21, 33, and 34 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Stratford et al. (WO 00/28920) (hereinafter “Stratford ‘920”). Claims 1-22 and 28-35 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Stratford et al. (WO 00/29481) (hereinafter “Stratford ‘481”) in view of Storch. In addition,

Claims 1-22 and 28-35 have been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Stratford '481 and Koulik et al. (U.S. Patent No. 6,270,788) (hereinafter "Koulik").

Response to Restriction Requirement

Applicants note that in the Office Action of March 6, 2009, the previous Restriction Requirement was deemed proper. Applicants respectfully traverse.

As acknowledged in the Office Action, Storch, Bronich, and Kabanov do not teach zwitterionic blocks. However, the Office Action then cited Stratford - but not for a teaching of zwitterionic blocks. Rather, Stratford was cited for its recitation of a zwitterionic polymer and ionic monomer. It is unclear how this teaching in Stratford could remedy the deficiencies in Storch, Bronich, and Kabanov.

In particular, Applicants note that the Office Action has not explained how Stratford discloses the presently recited zwitterionic blocks. In the absence of such an explanation, Applicants again respectfully submit that the Restriction Requirement is improper. Accordingly, the reconsideration and withdrawal of the Restriction Requirement is respectfully requested.

Response to rejection under 35 U.S.C. § 112

As mentioned above, Claim 18 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

In response, Applicants have amended claim 18 to correct the typographical error noted by the Examiner. Accordingly, Applicants submit that this rejection has been overcome, and withdrawal of this rejection is respectfully requested.

Response to provisional obviousness-type double patenting rejections

As mentioned above, Claims 1-22 and 28-35 have been provisionally rejected on the grounds of obviousness-type double patenting based on (1) U.S. Application No. 10/542,333; (2) U.S. Application No. 10/501,393; and (3) U.S. Application No. 10/544,113, each in view of Storch. The position set forth in the Office Action is that Storch discloses polyion block copolymers. Applicants respectfully traverse these provisional rejections because Storch does not disclose or suggest polyion block copolymers, contrary to the position set forth in the Office Action.

Applicants submit herewith a Declaration Under 37 C.F.R. § 1.132 by Mr. Lewis, who explains that Storch does not disclose block copolymers. Rather, as is noted in Paragraph No. 5 of Mr. Lewis' Declaration, Storch instead discloses only random copolymers. Block copolymers are not disclosed or suggested in Storch.

Storch does not disclose or suggest the subject matter for which it is cited in the Office Action, and Applicants therefore submit that it is incorrect that the combination of the claims of the above-mentioned applications and Storch renders the presently claimed invention unpatentable. Thus, Applicants respectfully request the reconsideration and withdrawal of each of these provisional obviousness-type double patenting rejections.

Response to rejections based upon Stratford

As mentioned above, Claims 1, 20, 21, 33, and 34 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Stratford '920. Claims 1-22 and 28-35 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Stratford '481 in

view of Storch. In addition, Claims 1-22 and 28-35 have been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Stratford '481 and Koulik. Applicants respectfully traverse.

Applicants first note that neither of the cited Stratford references anticipates or renders obvious the presently claimed invention because they do not disclose or suggest the presently recited block copolymers. Mr. Lewis' attached Declaration (see Paragraph Nos. 6 and 7) clearly explains that the Stratford references disclose polymers made by the radical polymerization of monomers, which results not in a block copolymer being formed, but rather in a random copolymer. Mr. Lewis explains that all of the polymers shown by the Examples of the Stratford references are random copolymers, rather than the presently claimed block copolymers. Mr. Lewis specifically states that "Stratford ['920] does not mention the block copolymers nor any polymerisation method that will form block copolymers as per Figure 1-5," and that "[t]he way the polymer is described in Stratford '481 indicates that the comonomers are mixed before polymerisation, and the worked examples are consistent with this....[thus] inevitably forming random copolymers." See Paragraph Nos. 6 and 7 of Mr. Lewis' Declaration. Accordingly, Applicants respectfully submit that the cited Stratford references do not anticipate or render obvious the presently claimed invention.

With respect to the rejection citing Storch, Applicants again note that Storch does not disclose block copolymers, contrary to the position set forth in the Office Action (see the explanation in Paragraph No. 5 of Mr. Lewis' Declaration). Storch instead discloses only random copolymers. Block copolymers are not disclosed or suggested in Storch. Therefore, Storch does not remedy the deficiencies of Stratford '481, and Stratford '481 in view of Storch does not render obvious the presently claimed invention.

Regarding the rejection citing Koulik, Applicants respectfully note that Koulik does not remedy the above deficiencies in Stratford '481. Applicants also note that the position set forth in the Office Action, that the terpolymer in Koulik "meets the limitations of claims 1, 8-22, [and] 28-34," is incorrect. The Office Action particularly cites column 6, lines 4-40 of Koulik to support its position, but this passage does not support the position set forth in the Office Action. In particular, as explained in Paragraph Nos. 8 and 9 of Mr. Lewis' Declaration, Koulik does not refer in these passages to block copolymers. Instead, the passages refer to "blocks" in Figure 1b of Koulik, which shows a schematic representation of a copolymer formed from three monomers. The molar ratios of each monomer are shown in the figure, and it is known in the art that such a figure does not necessarily refer to the polymer being a block copolymer. Instead, it merely refers to a polymer that contains the recited proportion of monomers. Koulik's reference to a "block" refers to the block in the figure 1b, not to a block of monomers in a polymer. Mr. Lewis explains further in Paragraph No. 9 of his Declaration that in order to determine whether Koulik discloses a block copolymer, a person having ordinary skill in the art would have to consider the polymerisation methods described in the reference. Mr. Lewis discusses the polymerisation methods and describes how Koulik discloses a random terpolymer, rather than a block copolymer as is presently claimed. Accordingly, neither Koulik nor Stratford '481, taken alone or in combination, renders obvious the presently claimed invention.

Finally, with respect to newly added Claim 45, the claim recites that the ionic pendant groups in the ionic block are tertiary amine groups. Applicants note that Koulik does not disclose or suggest such a feature, where the reactive pendant groups which bond to heparin are primary amine groups (see, e.g., column 6, lines 39-40 and column 6, lines 61-22 of Koulik). Instead, Koulik discloses that a primary amine group is essential for reacting with an aldehyde

group in reductive amination, as disclosed in column 7, line 42 to column 8, line 47. Koulik does not disclose that covalent bonds are formed between tertiary amine groups and aldehyde groups (the product of periodate oxidation of sugar units in heparin). Therefore, Applicants respectfully note that Claim 45 is not anticipated by or rendered obvious by Koulik, alone or in view of Stratford '481.

In view of the above, Applicants therefore respectfully request the reconsideration and withdrawal of these rejections.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

/ Travis B. Ribar /

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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CUSTOMER NUMBER

Travis B. Ribar
Registration No. 61,446

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